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ABSTRACT

DAY ONE is an education program offered to parents of newborn children to help them become the child's first educator. The DAY ONE Research Project was a collaborative effort of the West Virginia Task Force on Children, Youth, and Families and the Charleston (West Virginia) Area Medical Center Women and Children's Hospital to measure the educational impact of the DAY ONE program on new mothers of low income status in southern West Virginia. The program combines video and trained volunteers to develop parent knowledge about infant behavior and cognitive development. Information from 30 participants who had seen the videos and 30 who had seen the videos and interacted with the volunteer was compared with questionnaire responses from 30 mothers with no DAY ONE experience. Ninety-four percent of responding mothers found the video easy to understand and 70 percent indicated that they had not known the information presented. Mothers with access to the full program had scores on a knowledge test that were 23% higher than mothers with limited access and 29% higher on the newborn knowledge section of the questionnaire than scores of mothers with no access to the DAY ONE Program. Eight tables present study findings, and appendixes present 14 tables of analyses of variance. (SLD)

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DAY ONE

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DAY ONE Research Final Report

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This report was prepared by Mary Hughes, Ph.D.,
Research Coordinator for the West Virginia
DAY ONE Research Project.

DAY ONE



DAY ONE Research Final Report

Conducted by the West Virginia Task
Force on Children Youth and Families
and
Charleston Area Medical Center
Women and Children's Hospital

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Margie Hale
Executive Director
West Virginia Task Force
on Children, Youth and Families
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The DAY ONE Program

DAY ONE is an education program offered to parents of newborn children to help parents be their child's first teacher.

DAY ONE Research Report Highlights

- 70% of the new mothers did not know most of the information presented in the DAY ONE videotape.
- 94% of the new mothers thought the DAY ONE videotape was easy to understand.
- 95% of the community resources were underutilized by the new mothers.
- Mothers with access to the full DAY ONE Program recorded scores 23% higher than mothers with limited access and 29% higher scores on the newborn knowledge section of the questionnaire than mothers with no access to the DAY ONE Program.

What does this research mean?

DAY ONE can help new parents become better parents by providing them with easy to understand information about how their baby learns and how to be their child's first teacher.

DAY ONE Background

DAY ONE is a West Virginia Task Force on Children, Youth and Families sponsored program for new parents to help them be their child's first teacher. The DAY ONE Program is presented to the new parents within 48 hours of giving birth. New parents see a video about how babies learn and are visited by a trained volunteer who demonstrates techniques and connects them to resources in the community.

Why?

DAY ONE links the private sector with government to support a new generation of successful learners. DAY ONE connects parents to resources and supports in ways that enable them to do a better job. DAY ONE is an investment in West Virginia's children and families.

Implementation

DAY ONE began at Charleston's Women and Children's Hospital in September of 1991. Cabell-Huntington, Ohio Valley, Preston Memorial, Reynolds Memorial, St. Mary's, WVU Children's, Weirton and Wheeling Hospitals are the newest operating sites in the state. Task Force on Children Regional Advisory Groups have DAY ONE Planning Groups in southern West Virginia, the Mid-Ohio Valley, the Eastern Panhandle and the Potomac Highlands.

Funding

DAY ONE is financed with grants from business, citizens, private foundations and government. Grants to date are from CONSOL Inc., C & P Telephone, Mrs. Ardath Francke, Junior League of Huntington, the Office of Governor Gaston Caperton, Margaret Fox, Kanawha City Lions Club, Monongahela Power Company, Mylan Pharmaceuticals, Inc., United Bankshares, Inc., the CAMC, Daywood, Greater Kanawha Valley, Herscher, Huntington, Bernard & Blanche E. Jacobson and One Valley Bank Foundations. Fundraising continues to carry DAY ONE forward to every hospital and birthing center in the state.

The Task Force On Children

The Task Force on Children, Youth and Families was formed in February of 1989 to begin a partnership between government and the private sector to support solutions for West Virginia's children. The mission of the Task Force is to improve the lives of West Virginia's children by mobilizing the private and public sector to create prevention and early intervention programs, policies and strategies. Members of the Task Force are among the state's most influential and respected business, labor, community and religious leaders.

Executive Summary

DAY ONE Research Project

The DAY ONE Research Project was a collaborative effort between the West Virginia Task Force on Children, Youth and Families and the Charleston (West Virginia) Area Medical Center Women and Children's Hospital to measure the educational impact of the DAY ONE Program on new mothers of low income status residing in southern West Virginia.

The DAY ONE Program emphasizes the mother as the first teacher, beginning with day one of their infant's existence. The DAY ONE educational program combines video and trained volunteers in developing parent knowledge about infant behavior and cognitive development.

On an average, the mothers participating in the DAY ONE Research Project were unemployed, had a high school education or less, had an annual income of \$10,000 or less, had one additional child and did not live with the father of the infant. The average age of the mother was 23, with the youngest mother being 14 and the oldest 35. About one-fourth of the mothers were teenagers.

Ninety-four percent (94%) of the responding mothers indicated that the information provided by the DAY ONE video was not hard to understand. Seventy percent (70%) of the mothers indicated they did not know most of the information presented in the program. Of 97 community resources available to the new mothers, only five percent were utilized by all the responding mothers. Ninety-five percent (95%) of the community resources were underutilized.

The major finding of the DAY ONE Research Project was that the DAY ONE Program, with the reinforcement of a trained DAY ONE volunteer, had a significant educational impact on participating mothers. Specifically, the mothers having access to the full DAY ONE Program recorded scores on the Newborn Knowledge Questionnaire that were 29 percent greater than the mothers that did not have access to any part of the DAY ONE Program, and 23 percent greater than the mothers that had access to the DAY ONE video but not the reinforcement of a trained volunteer.

The full DAY ONE Program includes the DAY ONE video, the reinforcement of the DAY ONE Program by a trained volunteer, the DAY ONE New Parent Resources brochure, and the DAY ONE pamphlet. Data from this Research Project indicates that the full DAY ONE Program is more effective in providing educational benefits to new mothers of Medicaid status than the DAY ONE Program without the reinforcement of a trained DAY ONE volunteer.

Introduction

The DAY ONE Research Project was a collaborative effort between the West Virginia Task Force on Children, Youth, and Families and the Charleston (West Virginia) Area Medical Center Women and Children's Hospital to measure the educational impact of the DAY ONE Program on new mothers of low income status residing in southern West Virginia.

The DAY ONE Program was developed over a five year period by New Horizons for Learning, a non-profit, international human resource network based in Seattle, Washington. Three interacting components make up the program: video, trained volunteer, and community resources. The core of the program is the DAY ONE videotape supported by trained DAY ONE volunteers. The tape introduces parents to the sensory and motor capabilities of their newborn, offers cues to understanding each baby's unique personality, explains the meaning of infant communication signals and demonstrates simple but effective techniques for stimulating the senses and providing an enriching environment to nurture optimum social and intellectual development.

A parent booklet includes pictures from the videotape and summarizes key information in an easy-to-read format. The trained volunteers reinforce the information provided by the video and the parent booklet. A community resource booklet informs parents of available community resources which provide opportunities for ongoing support and education during the first year of their children's lives.

The West Virginia Task Force on Children, Youth and Families strongly felt that the DAY ONE Program could have an educational impact on parents of low income status residing in southern West Virginia and therefore, could be an effective tool for enhancing the lives and future of many West Virginia children.

Major Purpose of the DAY ONE Research Project

The major purpose of the DAY ONE Research Project was to determine if there was a difference in knowledge of infant abilities and development among new parents of low income status residing in southern West Virginia that

- (1) received the DAY ONE Program with the reinforcement of a trained volunteer;
- (2) received the DAY ONE Program without the reinforcement of a trained volunteer; and
- (3) did not receive the DAY ONE Program.

A second purpose of the Research Project was to determine if there was a difference in parenting behavior among the three groups presented above. These two purposes were carried out in two separate phases.

Phase I Summary

In the first phase of the research, information was gathered on 90 mothers of Medicaid status that stayed in the Women and Children's Hospital during the winter and summer months of 1992. Thirty of the new mothers filled out a Knowledge Questionnaire that did not have access to the DAY ONE video or a trained DAY ONE volunteer, (Group 1); thirty of the new mothers filled out a Knowledge Questionnaire that had access to the DAY ONE video but not a trained volunteer, (Group 2); and thirty of the new mothers filled out a Knowledge Questionnaire that had access to both the DAY ONE video and a trained volunteer, (Group 3). All three groups were equivalent in age, income, education, employment status, household members and number of other children.

The average mother of Phase I of the Research Project was a 23 year-old single parent with a high school education, unemployed with an income of \$10,000 or less, and with at least one additional child. Overall, teenage mothers accounted for about one-fourth of the 90 mothers.

The mothers that had access to the complete DAY ONE Program that included the reinforcement of a trained volunteer had significantly higher scores on the Knowledge Questionnaire than the mothers that had access to the DAY ONE video but not the reinforcement of a trained volunteer, and to the mothers that did not have access to the DAY ONE Program. The mothers having access to the full DAY ONE Program had scores on the Knowledge Questionnaire that were 29 percent greater than the mothers that did not have access to the DAY ONE Program and 23 percent greater than the mothers that had access to the DAY ONE video but did not have access to the reinforcement of a trained volunteer.

For mothers over the age of 19, the school appeared to have played an almost non-existent role in providing information about infant caregiving and behavior, while the most likely source was parents. Teenage mothers were more likely to indicate they had learned "a lot" about infant caregiving from parents, doctors, books and special classes than the older mothers.

There were no differences among the three groups on the Infant Caregiving Inventory, a section of the questionnaire that was designed to assess the extent to which parents see themselves as instrumental in their infant's

growth and development. The results of this section indicated that most of the mothers that participated in Phase I of the Research Project saw themselves as a moderately strong influence in their infant's growth and development.

In summary, the DAY ONE Program, with the reinforcement of a trained volunteer, appears to have had a significant educational impact on the mothers of low income status residing in southern West Virginia that participated in the DAY ONE Research Project.

Phase II Summary

Phase II of the DAY ONE Research Project was designed to measure differences in parenting behavior among the three groups of Phase I mothers after they had left the hospital. A color coded Behavior Questionnaire was mailed to 153 new mothers that had consented to participate in the DAY ONE Research Project while they were in the hospital. Sixty-nine of the 153 new mothers or 45 percent responded to the Phase II Behavior Questionnaire.

The major findings of this phase were as follows:

- (1) On an average, the 69 mothers were unemployed, had a high school education or less, had an annual income of \$10,000 or less, had one additional child and did not live with the father of the infant.
- (2) Over one-fourth of the 69 mothers were teenagers.
- (3) Seventy-eight percent of the 69 mothers had a high school education or less.
- (4) One-third of the 69 mothers did not read to their new baby.
- (5) Only six percent of the 49 mothers in Groups 2 and 3 indicated the DAY ONE video was hard to understand.
- (6) Seventy percent of the 49 Group 2 and 3 mothers indicated they did not know most of the information presented in the video.
- (7) Only five percent of 97 community resources were personally used by all the 69 mothers.
- (8) The community resource most used by the 69 mothers was the West Virginia Department of Health and Human Resources with 78 percent of the mothers indicating use.
- (9) Twenty-one community resources received only one mark, indicating that only one of the 69 mothers used the respective resource.

Due to irregular responses, the data from the Behavior Questionnaire could not be used to measure differences in parenting behavior among the three groups.

Procedure

The DAY ONE Research Project was divided into two phases. The first phase, Phase I, was designed to collect data on three consecutive groups of new mothers during the time they were in the hospital to measure the educational effect of the DAY ONE Program. The second phase of the project, Phase II, was designed to collect data on the same three groups of new mothers after they had left the hospital to measure the effect of the DAY ONE Program on parenting behavior.

The population for Phase I of the Research Project was 90 new mothers who were staying one to two days in the Charleston Area Medical Center Women and Children's Hospital after the birth of their child during the months of January, 1992 through June, 1992 who had the following characteristics: (1) Medicaid status; (2) who had a healthy infant as determined by: Apgars of no less than 7 at one minute and no less than 9 at five minutes and admission to the newborn nursery; and (3) who volunteered to be a part of this program and signed a consent form during the hospital perinatal health and education unit.

Specifically, Phase I was designed to collect data on new parent knowledge about infant abilities and infant behavior as recorded on a Knowledge Questionnaire from:

- (1) Group 1 - 30 new mothers that did not have access to the DAY ONE video program or a trained DAY ONE volunteer;
- (2) Group 2 - 30 new mothers that watched the DAY ONE video program but did not receive program reinforcement from a trained volunteer; and
- (3) Group 3 - 30 new mothers that watched the DAY ONE video program and received the following: a DAY ONE pamphlet, a community resource brochure and program reinforcement from a trained volunteer.

The volunteer reinforced the DAY ONE video and the DAY ONE Program by: (1) asking the new mother if she had any questions or concerns; (2) discussing the DAY ONE pamphlet with the new mother; (3) showing the new

mother simple ways to enhance the infant's learning experiences and environment; and (4) discussing the New Parent Resources brochure that new parents can use for support and education during the first year of their babies' lives. The volunteer also left a packet for making simple toys and room decorations with the new mother.

The second phase of the research design was constructed to measure new parent behavior change and the lasting effects of the DAY ONE Program as recorded on a Behavior Questionnaire.

Questionnaires

The consent form and the Knowledge and Behavior Questionnaires were color coded for each group. The Knowledge Questionnaire was administered at the hospital by a trained volunteer. The Behavior Questionnaire, of Phase II, was mailed to each new mother that had signed a consent form. A signed consent form was not an indication of participation in the DAY ONE Research Project, only that the new mother had consented to participate if time allowed.

The Knowledge and Behavior Questionnaires were patterned after the New Horizons for Learning questionnaire and modified to the expected level of education of those participating in the Research Project.

Volunteer Training

DAY ONE volunteers received 15 hours of training to prepare them to visit parents in the hospital after the parent had viewed the DAY ONE videotape. The comprehensive training package, developed by DAY ONE, included the history and goals of the program, background information on cognitive research, infant stimulation, parenthood, infant states and temperament, communication skills, community resources and an orientation to hospital visiting. The training program was conducted by Mary Ellen O'Keeffe of Seattle, Washington.

Limitations

Restriction on Generalization

Due to the nonrandom assignment of subjects to the three groups and nonrandom selection of subjects from the identified population of mothers of Medicaid status the results of the study will be specific to the data set.

The research team investigated the possibility of random assignment of subjects to the different groups, but due to the limited time new mothers are in the hospital, the odd hours of admittance and other research administrative problems, random assignment was not feasible.

Data and Results, Phase I

DAY ONE Knowledge Questionnaire

The major purpose of the Knowledge Questionnaire was to obtain data to measure differences and/or communalities among the three groups of new mothers in the following areas: (1) parent knowledge of infant abilities and development; (2) age, education, income, employment and other demographics of the respondents and their families; (3) sources of information relating to being a parent; and (4) the degree to which parents see themselves as instrumental in their infant's growth and development. The average group results for these categories are provided in Tables 1 through 4. Following is a summary of the survey questionnaire by category.

I. Learning About Parenthood.

This section contained 9 questions that measured the extent to which new parents already made use of sources of information about childrearing. The respondent was asked, "We would like to know which people and resources have helped you to learn about being a parent." The Learning Resource score for each group was the total number of items from which the respondent had learned "a lot" converted to a percentage. A low percentage score would indicate a low number of sources were identified by the respondents as providing "a lot" of information about parenthood.

II. Newborn Knowledge Questions.

- a. What New Babies Are Like. This section of the questionnaire consisted of 15 factual content items taken from the DAY ONE videotape. The score was the number of correct answers to the 15 factual content questions, converted to a percentage.
- b. Developmental Expectations. This section consisted of five factual

content items taken from the DAY ONE videotape. The authors of the DAY ONE Program documented that parents who have early expectations of their child's development (they believe that their child can see, hear and learn at birth) tend to have children with better intellectual development later on. The score for this section was the number of correct answers converted to a percentage.

- c. Total of Newborn Knowledge questions converted to a percentage. The total score for Newborn Knowledge was the sum of the 15 factual consistent items for "What New Babies are Like" and the 5 factual content items for "Developmental Expectations" converted to a percentage.

III. Infant Caregiving Inventory (ICI).

This section of the questionnaire was designed to assess the extent to which parents see themselves as instrumental in their infant's growth and development. The ICI score was computed by assigning 4 points for every item marked "strong" influence, 3 points for "moderate" influence, 2 points for "slight" influence and 1 point for "no" influence. A high percentage score would indicate that the parents see themselves as a "strong" influence in their infant's growth and development.

IV. Family Information.

This section collected descriptive and demographic information about the study participants. The group average is reported for different items of information in Table 1.

Results

Subjects - Phase I

Presented in Table 1 is information about the mothers of Phase I and their families by groups.

Respondent	Group 1 n = 30	Group 2 n = 30	Group 3 n = 30	*
a. Age (average years)	22.9	21.7	23.4	ND
b. Education (code)	1.7	2.1	2.1	ND
High School or Less	90%	77%	83%	
c. Employment (code)	2.6	2.4	2.6	ND
Unemployed	80%	63%	79%	
d. Income (code)	1.6	1.3	2.0	3:2
Less than \$5,000	37%	30%	32%	
e. Number of Children	1.13	0.86	1.06	ND
No Children	47%	53%	43%	
f. Household Members	2.26	2.1	1.7	ND
3 Other Members	30%	30%	20%	
g. Weight of Newborn	126.65	114.05	122.33	2:1

* 3:2 Group 3 statistically different from Group 2.

2:1 Group 2 statistically different from Group 1.

ND No statistical difference.

Subjects - Phase I

The average age of the 90 mothers participating in Phase I of the study was about 23 (22.6). The youngest mother participating was 16 and the oldest was 34. Forty-three percent of the mothers had less than a high school education, 40 percent had a high school education, 74 percent recorded they were unemployed (19 percent recorded full time employment) and 33 percent indicated their income was \$5,000 or less. About 24 percent of the mothers were nineteen years of age or younger, 63 percent were between the age of 20 and 29 and 12 percent were over the age of 30.

The average age of the father of the infant was 25. The fathers' ages ranged from 21 to 51. Forty-five percent of the fathers had a high school education or the equivalent, 47 percent had full time employment and 28 percent were unemployed.

Seventy-three percent of the mothers did not list the father of the infant as being a member of the household. Twenty-four percent of the mothers lived with one or two parents, 15 percent indicated that one to five brothers or sisters lived in the household and 52 percent indicated having one to six other children.

On an average, there were no differences among the three groups of Phase I mothers on age, education, employment status, number of previous children, number of household members, father's age or education. Differences among the Phase I groups were as follows:

- (1) Income: Group 3 indicated a higher income than Group 2 but not higher than Group 1. But, all the mothers participating in the Research Project were of Medicaid status, therefore, the differences in income were of amounts less than the Medicaid allowance.
- (2) The average weight of the newborn was less for Group 2 than for Group 1.
- (3) The employment status of the father of the infant was less for Group 3 than for Group 1.
- (4) Group 1 indicated a greater number of the fathers of the infants were a member of the household than Group 2 or Group 3. In Group 2, 83.7 percent of the mothers indicated that the father of the infant was not a member of the household compared to 80 percent for Group 3

and 56.7 percent for Group 1.

Nearly half of the new mothers participating in Phase I of the project had less than a high school education, approximately one-fourth were teenagers, the majority were unemployed, all had Medicaid status income levels and a majority gave an indication that the father of the infant did not live in the household.

Breakdown of Mother's Age

Three age categories were formed to investigate the possibility of an interaction between the age of the mother and different segments of the DAY ONE Knowledge Questionnaire. The age categories were:

- (1) teenager - 19 years of age or less;
- (2) young adult - 20 to 29 years of age; and
- (3) older adult - 30 years of age or older.

In Table 2, the 90 participating Phase I mothers are presented by age category.

Table 2

Mother's Age by Age Category & Group
Phase I - DAY ONE Research Project
Charleston Area Medical Center
Women and Children's Hospital
Charleston, West Virginia (1992)

	Total	Group 1	Group 2	Group 3
Teenager	22	9	7	6
Young Adult	57	17	22	18
Older Adult	11	4	1	6
Total	90	30	30	30

Of the 22 teenage mothers, 11 or 50 percent have less than a high school education; 9 have a high school education; and 2 have some college. Of the 57 mothers between the ages of 20 and 29, 25 or 47 percent have less than a high school education; 18 have a high school education; five, a GED; eight, some college; and one, a college degree. Of the 11 mothers over the age of 29, three or 27 percent have less than a high school education; two, a high school education, two, a GED; and four some college.

Data Analysis - Knowledge Questionnaire

The results of the data analyses on the knowledge portion of the questionnaire are presented in Table 3 and are discussed by category.

Table 3
Knowledge Questionnaire - Phase I

Comparison of Three Groups
DAY ONE Research Project
Charleston Area Medical Center
Women and Children's Hospital
Charleston, West Virginia (1992)

Variable	Group 1 n = 30	Group 2 n = 30	Group 3 n = 30	*
I. Learning About Parenthood (9 questions - "A Lot")	17.4% 47/270	28.1% 76/270	24.8% 67/270	2:1
II. Newborn Knowledge				
a. What New Babies Are Like (15 questions)	70.2%	69.1%	85.1%	3:1,2
b. Developmental Expectations (5 questions)	30.7%	46.0%	53.6%	3:1
c. Total (a + b)	60.3%	63.3%	77.9%	3:1,2
III. Infant Caregiving Inventory (15 Questions)	78.8%	79.7%	81.0%	ND

* 3:1,2 Group 3 statistically different from Group 1 and Group 2 at $p < .05$. No difference between Group 1 and Group 2.

3:1 Group 3 statistically different from Group 1 at $p < .05$.

ND No statistical difference

Learning About Parenthood

A greater percentage of the mothers in Group 2 indicated they learned "a lot" about being a parent from outside sources (parents, relatives, doctors) than the mothers of Group 1. From an analysis of all the 90 mothers, disregarding group membership, 66 percent indicated they learned "a lot" from parents; 39 percent indicated learning "a lot" from a doctor; 33 percent indicated books; 26 percent, relatives; 12 percent, special classes; 11 percent, friends; 7 percent, radio; and 6.7 percent school. Overall, the least likely source of information was school and the most likely source was parents. But, the group choice of learning "a lot" does not appear to be as important as the choice by age level.

A closer look at age levels and Learning About Parenthood found that teenage mothers were more likely to indicate they had learned "a lot" about infant caregiving from an outside source than the older age groups. The oldest age group was next most likely to seek outside information. Presented in Table 4 are the results of learning "a lot" about parenthood by age group and by source.

Table 4

**Learning "A Lot" About Parenthood
By Age Group and Source
DAY ONE Research Project - Phase I
Charleston Area Medical Center
Women and Children's Hospital
Charleston, West Virginia (1992)**

Source	Teens (n=22)	Young Adults (n=57)	Older Adults (n=11)	All Subjects (n=90)
Parents	64%	61%	91%	66%
Doctor	64%	32%	27%	39%
Books	41%	30%	36%	33%
Special Class	32%	7%	0%	12%
Relatives	27%	21%	45%	26%
Experts	23%	7%	9%	13%
School	23%	2%	0%	6.7%
Friends	9%	12%	9%	11%
Radio	9%	4%	18%	7%
Average Percentage	32.4%	19%	26%	24%

Teens (19 years of age and younger)

Young Adults (age 19 to 29)

Older Adults (age 30 and older)

Teenage mothers indicated they learned "a lot" about parenthood from their parents, doctors, books and special classes. Older adults were more likely to consult with their parents about parenthood than any other source and indicated school and special classes as the least likely sources of having acquired information. The young adult group indicated parents, doctors, books and relatives as the most likely sources of acquiring information with school as the least likely source of learning "a lot."

Total Score of Newborn Knowledge Questions

The total score for Newborn Knowledge included the 15 factual content items taken from the DAY ONE video relating to what new babies are like plus the 5 factual items relating to developmental expectations.

Overall, there was a significant difference in total average scores on Newborn Knowledge among the three groups. The total percentage score for each group was as follows:

Group 1 - 60.3 percent;

Group 2 - 63.3 percent; and

Group 3 - 77.9 percent.

Group 3, the group that had access to the full DAY ONE Program that included the DAY ONE video, the reinforcement of the DAY ONE Program by a trained DAY ONE volunteer, a DAY ONE pamphlet and a resource booklet, had a significantly higher score on total Newborn Knowledge than the other two groups. Specifically, Group 3 had a 29 percent higher score on overall newborn knowledge than Group 1, the group that did not have access to the DAY ONE video or the trained volunteer; and a 23 percent higher score than Group 2, the group that had access to the DAY ONE video but did not receive the reinforcement of the trained volunteer. There was no significant difference in knowledge scores between Group 1 and Group 2.

Because there was a difference in the indicated income levels of the three groups, even though all the participants were of Medicaid status, an additional analysis was conducted to determine if income was interacting as a determinant

of knowledge. From the results of analysis of variance, there was no indication that income made a difference in the knowledge scores among the three groups.

Subsection of Newborn Knowledge: What New Babies Are Like

There was a significant difference in knowledge scores among the three groups on this subsection. Group 3, the group that had access to the full DAY ONE Program with the reinforcement of the trained volunteer, had a significantly higher score on this portion of the questionnaire, What New Babies Are Like, than Group 1 or Group 2. Group 3 had an average score of 85 percent compared to 69 percent for Group 2 and 70 percent for Group 1. There was no difference in average group scores between Groups 1 and 2.

In summary, the group that had access to the complete DAY ONE Program that included both the video and the reinforcement of the trained volunteer scored significantly higher on What New Babies Are Like than the two groups that did not have access to the complete DAY ONE Program. There was no difference in scores on What New Babies Are Like between the group that had access to the DAY ONE video but not to a trained volunteer and the group that did not have access to the video or the trained volunteer.

Subsection of Newborn Knowledge: Developmental Expectations

The greatest percentage of difference in knowledge scores among the three groups was on Developmental Expectations. On an average, Group 3 had a 74 percent higher score on Developmental Expectations than Group 1. There was no statistical difference in average group scores between Groups 1 and 2 nor between Groups 2 and 3.

In summary, Group 3, the group that had access to the full DAY ONE Program and the reinforcement of the trained volunteer, scored significantly higher on Developmental Expectations than Group 1, but not significantly higher than Group 2.

Infant Caregiving Inventory

There were no differences among the three groups in this area. The results of the Infant Caregiving Inventory indicate that most of the mothers see themselves as instrumental in their infant's growth and development. The scores of 78.8 percent for Group 1, 79.7 percent for Group 2, and 81 percent for Group 3 indicate that the mothers see themselves as a moderately strong influence in their infant's growth and development.

Data and Results, Phase II

Phase II of the DAY ONE Research Project was designed to measure differences in parenting behavior among the three groups of Phase I new mothers after they had left the hospital. The three groups of Phase I were: Group 1, new mothers of Medicaid status that did not have access to the DAY ONE Program; Group 2, new mothers of Medicaid status that had access to the DAY ONE video, but not the trained DAY ONE volunteer; and Group 3, new mothers of Medicaid status that had access to the complete DAY ONE Program that included the reinforcement of the DAY ONE Program by a trained volunteer.

A color coded Behavior Questionnaire was mailed to each new mother that had signed a consent form to participate in the DAY ONE Research Project. As noted earlier, a signed consent form was not an indication of participation in the DAY ONE Research Project, only that the new mother had consented to participate if time allowed. Therefore, many of the new mothers that signed a consent form did not actually participate in the DAY ONE activities while they were in the hospital. The identity of each new mother that actually participated in Phase I was concealed, so it was not possible to match consent forms (that included names and addresses) with the participating mothers to limit the mailing of the Behavior Questionnaire to those mothers.

The color coded Behavior Questionnaire was mailed to 153 new mothers. Sixty-nine of the 153 new mothers or 45 percent responded to the Phase II Behavior Questionnaire. Of the 69 mothers, 20 belonged to Group 1, 33 to Group 2 and 16 to Group 3. Following in Table 5 is an overview of participation in Phase I of the DAY ONE Research Project by the responding 69 mothers of Phase II.

Table 5
Phase II Respondents
DAY ONE Video Watching During Phase I
DAY ONE Research Project

DAY ONE Videos	Group 1 n = 20	Group 2 n = 33	Group 3 n = 16
Watched Part I Only	3	7	7
Part II Only	0	0	0
One Part, Don't Remember	3	8	3
Watched Both Parts	2	10	4
Did Not Watch	10	8	2
Watched One or Both	8	25	14
Did a Volunteer Speak With You	9	10	14

Please note that eight of the 20 mothers in Group 1 indicated they had watched one or both parts of the DAY ONE video. This is an interesting result because Group 1 mothers did not have access to the DAY ONE video.

Of the 33 Group 2 mothers, only 10 indicated they had watched both parts of the DAY ONE video, seven of the 33 mothers indicated they had watched Part I only and eight indicated they had watched one part but could not remember which part.

Of the 16 Group 3 mothers, 14 indicated they had watched one or both parts of the video, but only four of the 16 indicated they had watched both parts.

For a valid evaluation of the effects of the DAY ONE Program on parenting behavior, all respondents in Groups 2 and 3 need to have indicated on the Behavior Questionnaire that they had watched both parts of the video. Also, there should not have been a response from Group 1 as to having watched the video. Of the 49 responding mothers in Groups 2 and 3, only 14 indicated they had watched both parts of the DAY ONE Program video; ten mothers from Group 2 and four from Group 1.

Because of the low response to having watched both parts of the DAY ONE video, statistical analyses over the different category responses among the three groups would not have been appropriate in trying to measure the effect of the DAY ONE Program on parenting behavior. Even though the data responses could not yield valid results concerning the DAY ONE Program and parenting behavior, the questionnaire still provided rich and useful information about the respondents, their use of community resources and in a limited manner, their assessment of the DAY ONE Program video.

Phase II - Respondents

The average age of the 69 mothers responding to the Phase II Behavior Questionnaire was 23. The youngest mother responding to the questionnaire was 14 and the oldest was 35. On an average, the mothers had a high school education or less, were unemployed, had less than \$10,000 annual income, had one additional child and the father of the infant was not a member of the household. Twenty-six percent of the 69 mothers were teenagers (less than 20 years of

age), 61 percent were between the ages of 20 and 29 and 13 percent were age 30 or over. Thirty-three percent had less than a high school education, 45 percent, a high school education and 22 percent had some college or a college degree. Thirteen of the 69 mothers indicated having a transportation problem.

The fathers' average age was 26, the majority of the fathers had a high school education and were employed full or part time.

Among the three groups of Phase II mothers there were no differences in average age, education, employment status, income or the percentage of households with the father of the infant as a member. Differences among the three groups were as follows: the mothers of Group 3 had a greater number of children than the mothers in Groups 1 and 2; a greater percentage of fathers in Group 2 were unemployed than in Group 1; and the mothers of Group 2 traveled 17.4 minutes to get to a doctor compared to 9.6 minutes for Group 1. Presented in Table 6 is information about the 69 respondents of Phase II and their families.

Table 6

Respondent Information
Phase II - DAY ONE Research Project

Respondent	Group 1 n = 30	Group 2 n = 30	Group 3 n = 30	*
a. Age (average years)	23	22	24	ND
b. Education (code)	2.25	2.36	1.87	ND
High School or Less	35%	33%	31%	
c. Employment (code)	2.8	2.6	2.8	ND
Unemployed	89.5%	78.8%	87.5%	
d. Income (code)	1.5	1.8	1.56	ND
Less than \$5,000	47%	50%	56%	
e. Number of Children	0.63	0.71	1.64	3:2,1
No Children	63%	56%	29%	
f. Household Members	1.9	2.0	2.4	ND
=> 3 Other Members	21%	40%	36%	
g. Weight of Newborn (ounces)	121	118	126	ND
h. Father's Age (of infant)	25	23	29.2	ND
i. Father's Education Status (code)	2.35	2.36	2.6	ND
Less than High School	20%	33%	6.7%	
j. Father's Employment	1.47	2.24	1.69	2:1
Unemployed	21%	52%	31%	
k. Indicate Father yes	31.5%	43.7%	28.5	ND
living in household no	(68.5%)	(59.3%)	(71.5%)	
l. Minutes to Doctor	9.6	17.4	14.2	2:1

* 3:1,2 Group 3 statistically different from Group 1 and Group 2 at $p < .05$. No difference between Group 1 and Group 2.

3:1 Group 3 statistically different from Group 1 at $p < .05$.

ND No statistical difference

Learning About Parenthood

This part of the Behavior Questionnaire was the same as in the Phase I Knowledge Questionnaire except for five additional questions. The five additional questions asked about specific components of the DAY ONE Program as a resource that helped the respondent to learn about being a parent. The specific DAY ONE resources were the DAY ONE pamphlet, the DAY ONE video, the DAY ONE volunteer, the DAY ONE toy packet, and the New Parent Resources Guide. The scores presented for this section are the total of the five DAY ONE resource questions that the respondent indicated they had used the resource "A Lot" or "Some." Presented in Table 7 is an overview of the average group response to the DAY ONE resources in learning about parenthood "a lot" or "some."

Table 7

DAY ONE Resources
"Learning About Parenthood"
Phase II - DAY ONE Research Project

	Group 1 n=20	Group 2 n=33	Group 3 n=16	*
DAY ONE Resources "A Lot"	0	10.3%	12.5%	ND
DAY ONE Resources "Some"	26%	37.5%	57.5%	3:2,1

ND - No Statistical Difference

3:2,1 Group 3 is statistically different from Groups 2 & 1 $p < 0.05$

There were no differences in the average percentage scores for the three groups on indicating they had used the DAY ONE resources "a lot." There was a significant difference among the three groups when the respondents indicated they had used the resources "some." Note that 26 percent of Group 1 respondents indicated they had used the DAY ONE resources "some" when in fact they did not have access to the resources. This example demonstrates the questionable nature of the data results when comparing the three groups on a particular category. The rest of the Phase II evaluation will present descriptive information with no group comparisons.

The Behavior Questionnaire asked, "What did you think about the DAY ONE video programs?" Even though the responses can not be taken at face value, two statements in this section need to be considered in the evaluation of the DAY ONE Program with relationship to mothers of low educational attainment. The two statements are: "I already knew the information presented in the DAY ONE videos," and "The videos were hard to understand." Presented in Table 8 are the responses by Groups 2 and 3 to this section of the questionnaire, "What Did You Think About the DAY ONE Video Program?"

Table 8

**Responding to the Videos
Groups 2 and 3
Phase II - DAY ONE Research Project**

DAY ONE Videos	Group 2 n=33	Group 3 n=16
Fun to Watch	27.3%	31.3%
Informative	69.7	87.5
I Have Used the Information	36.4	56.3
Made You Feel Good	50	NR
They Weren't Specific Enough	6.1	NR
I Already Knew	24.2	37.5
Hard to Understand	6.1	NR
They Were Professionally Done	12.1	43.8
They Talked Down to Me	9.1	NR

NR = No Response

A small percentage of mothers (6.1%) indicated the DAY ONE video was hard to understand. Of the two groups reported above, 14 of the 49 mothers indicated they already knew most of what was in the program. Stated another way, almost 70 percent of the mothers did not know most of the information presented in the DAY ONE video. The responses to both of these statements indicate the suitability of the DAY ONE Program for mothers of low educational attainment.

Help With Parenting

The Phase II questionnaire listed 97 resources that parents use when their babies are young. The respondents were asked to check off the ones they had personally made use of. Following are the responses of the 69 mothers to using the 97 resources.

On an average, the mothers indicated they made use of about 5.3 percent of the 97 resources. The following nine community resources were most used by the 69 mothers as indicated by the percentage of the 69 mothers checking the relevant resource.

Percentage of Mothers

1. West Virginia Department of Health and Human Resources	78%
2. Parks and Recreation	40.5%
3. Health Department	34.7%
4. Pediatric Services	33%
5. Human Services	33%
6. Libraries	31.8%
7. Obstetrics	26%
8. Family Planning	24.6%
9. Women Care	17.4%

In total, there were 21 least-used community resources as indicated by each resource having only one check. The 21 least-used community resources are as follows:

1. Covenant House
2. Children's Home Society of WV, Inc.
3. Dreikur's Center for Family Education
4. Kanawha Pastoral Counseling Center
5. March of Dimes
6. Parent Support Network
7. River Valley Child Development Services
8. Ronald McDonald House of Southern WV
9. WV University Extension
10. YMCA
11. YWCA
12. Christian Service Center
13. Helping Hands
14. Shoe Fund
15. Upper Kanawha Valley Improvement Council
16. Developmental Disability Information and Referral
17. Education
18. Information and Referral Linkline
19. Mental Health Crisis Line
20. Parents Anonymous
21. Parents Without Partners

Question: Do you read to your new baby?

Twenty-three of the 69 mothers indicated they did not read to their new baby. One mother asked, "No, should I be reading to my new baby?"

Overall Summary of the DAY ONE Research Project

The DAY ONE Program emphasizes the mother as the first teacher, beginning with day one of her infant's existence, with the aid of video and trained volunteers.

The major purpose of the DAY ONE Research Project was to determine if the DAY ONE Program made a difference in learning about infant abilities and development for new mothers of low income status.

During the months of January, 1992 through June, 1992, three groups of 30 new mothers of Medicaid status were given a Knowledge Questionnaire while staying in the Charleston Area Medical Center Women and Children's Hospital after the birth of their child. One group of new mothers did not have access to the DAY ONE Program; one group had access to the DAY ONE video program; and one group had access to the DAY ONE video program plus received program reinforcement from a trained volunteer, a DAY ONE pamphlet and a community resource brochure. All three groups were equivalent in average age, income, education, employment status, household members and number of other children.

The average age of the 90 mothers was 23. A majority of the mothers were single, unemployed with an income of \$10,000 or less and a high school education. About one-third of the mothers indicated an income of \$5,000 or less. Fifty percent of the 22 teenage mothers had less than a high school education, and 47 percent of the mothers between the ages of 20 and 29 had less than a high school education. Only one of the 90 mothers had a college degree.

On an average, the group of mothers that had access to the DAY ONE Program with the reinforcement of a trained volunteer had significantly higher scores on the Behavior Questionnaire than the other two groups of mothers. From the data results, it appears that the DAY ONE Program with the reinforcement of a trained volunteer made a difference in the educational attainment of newborn behavior and cognitive development with new mothers of low income status.

An encouraging note was that teenage mothers were more likely than older mothers to indicate they had learned "a lot" about infant caregiving from doctors, books and special classes. The older mothers indicated learning "a lot" from parents.

The evaluation of Phase II of the DAY ONE Research Project gave an indication that the DAY ONE video was not too difficult for mothers of low educational attainment and that these same mothers did not previously know the information provided in the video. Also, the evaluation documented the underutilization of 95 percent of the community resources available to the new mothers.

Recommendations

From the results of the DAY ONE Research Project the following recommendations are proposed:

- (1) The offering of the full DAY ONE Program (with the reinforcement of trained volunteers) in the public schools no later than the 10th grade due to the low educational attainment of teenage mothers;
- (2) The offering of the full DAY ONE Program to all mothers of Medicaid status by: public television, with the reinforcement of a trained volunteer home visitor; in special classes at hospitals, medical clinics, homes for teenage mothers, child care centers; and through the Department of Health and Human Resources.
- (3) It is recommended that counties with high rates of children living in poverty (40 percent or more of the population age 18 and under living below the poverty level), combined with high rates of adults with less than a ninth grade education (15 percent or more of the population age 25 and over with less than a ninth grade education), be targeted for the full DAY ONE Program. According to the 1990 West Virginia Census data, the following counties have high rates of children living in poverty and high rates of adults with low educational attainment.

McDowell County -

50.3 percent of the children (age 18 and under) live below the poverty level, and 20 percent of the population age 25 and over have less than a ninth grade education.

Clay County -

48.4 percent of the children live below the poverty level, and 18.4 percent of the adults have less than a ninth grade education.

Webster County -

46 percent of the children live below the poverty level, and 21.9 percent of the adults have less than a ninth grade education.

Lincoln County -

45.1 percent of the children live below the poverty level, and 18.8 percent of the adults have less than a ninth grade education.

Gilmer County -

40.7 percent of the children live below the poverty level, and 15.3 percent of the adults have less than a ninth grade education.

Lincoln and McDowell Counties have the lowest percentage of the population with a college education among the 55 counties of West Virginia with 4.7 percent and 4.6 percent respectively.

- (4) This recommendation is posed as a question. Why are so few mothers of Medicaid status utilizing so few of the community resources available to them?
- (5) This recommendation is to providers of the DAY ONE Program -

The data in this Research Project indicates that the DAY ONE Program without the reinforcement of a trained DAY ONE volunteer is not as effective as the DAY ONE Program with the reinforcement of a trained volunteer, therefore, for the DAY ONE Program to have an educational impact on new mothers, the full Program must be available to them and they must have time to participate.

- (a) Provide time for new mothers to participate fully in the DAY ONE Program;

- (b) coordinate the services of trained DAY ONE volunteers so they may reinforce the information and parenting skills provided by the Program; and
- (c) If there is not enough time for the mother to participate in the full DAY ONE Program while she is in the hospital, then other places and other times should be investigated.

Appendices

Analysis of Variance Reports

ANOVA Table for Response Variable: PERCENT #85 What New Babies Are Like

Source	DF	Sum-Squares	Mean Square	F-Ratio	Prob>F
Error Term					
A (GROUP)	2	4789.134	2394.567	7.66	0.0009
ERROR					
ERROR	87	27191.11	312.5415		
TOTAL(Adj)	89	31980.25			

Means & Standard Errors for Y = PERCENT: What New Babies Are Like

Term	Count	Mean	Std. Error
ALL	90	74.81482	
A: GROUP			
1	30	70.22223	3.2277
2	30	69.11111	3.2277
3	30	85.11111	3.2277

Fisher's LSD Comparison Report

Response Variable: PERCENT Factor(A,Group) Error Term: ERROR
What New Babies Are Like

Summary Results = .05 Level Codes

Code(Level)	Mean	ABC
A(2)	69.11111	..S
B(1)	70.22223	..S
C(3)	85.11111	SS.

Analysis of Variance Report

ANOVA Table for Response Variable: PERCENT #86

Influences On Children

5 Questions (35-39)

Source	DF	Sum-Squares	Mean Square	F-Ratio	Prob>F
Error Term					
A (GROUP)	2	10248.89	5124.444	5.11	0.0079
ERROR					
ERROR	87	87173.34	1001.992		
TOTAL(Adj)	89	97422.22			

Means & Standard Errors for Y = PERCENT: Influences On Children

TermCount	Mean	Std.Error
ALL 90	44.44444	
A: GROUP		
1 30	30.66666	5.779251
2 30	46	5.779251
3 30	56.66666	5.779251

**Fisher's LSD Comparison Report
Influences On Children**

Response Variable: PERCENT		Factor(A,Group)	Error Term: ERROR
Summary Results = .05		Level Codes	
Code(Level)	Mean	ABC	
A(1)	30.66666	..S	
B(2)	46	...	
C(3)	56.66666	S..	

Analysis of Variance Report

**ANOVA Table for Response Variable: PERCENT #89
Infant Caregiving Inventory (#89) 15 Questions, 20-34.**

Source	DF	Sum-Squares	Mean Square	F-Ratio	Prob>F	Error Term
A (GROUP)	2	67.40746	33.70373	0.20	0.8195	ERROR
ERROR	87	14692.59	168.8804			
TOTAL(Adj)	89	14760				

Means & Standard Errors for Y = PERCENT

Infant Caregiving Inventory (#89) 15 Questions, 20-34.

TermCount	Mean	Std.Error
ALL 90	79.88889	
A: GROUP		
1 30	78.88889	2.372624
2 30	79.77777	2.372624
3 30	81	2.372624

Analysis of Variance Report

ANOVA Table for Response Variable: TOTAL%

#91 Total Score for #84 & #86

Total of 20 questions (11-19, 40, 42, 43-46, 35-39).

Source	DF	Sum-Squares	Mean Square	F-Ratio	Prob>F	Error Term
A (GROUP)	2	5362.222	2681.111	8.52	0.0004	ERROR
ERROR	87	27393.33	314.8659			
TOTAL(Adj)	89	32755.55				

Means & Standard Errors for Y = TOTAL%

TermCount	Mean	Std.Error
ALL 90	67.22222	
A: GROUP		
1 30	60.33333	3.239681
2 30	63.33333	3.239681
3 30	77.99999	3.239681

Fisher's LSD Comparison Report

Response Variable: TOTAL% Factor(A,Group) Error Term: ERROR

Summary Results _ = .05 Level Codes

Code(Level)	Mean	ABC
A(1)	60.33333	..S
B(2)	63.33333	..S
C(3)	77.99999	SS.

Detail Report

Variable: TOTAL% Total Percent, 20 Q Sections II, IV, V

Break: GROUP = 1

Mean - Average	60.33333	No. observations	30
Lower 95% c.i. limit	54.15241	No. missing values	0
Upper 95% c.i. limit	66.51425	Sum of frequencies	30
Adj. sum of squares	7946.667	Sum of observations	1810

Standard deviation	16.55364	Std.error of mean	3.022267
Variance	274.023	T-value for mean=0	19.96294
Coef. of variation	.2743697	T prob level	0.0000
Skewness	-.4658691	Kurtosis	-.6258325
Normality Test Value	0.987	Reject if >	1.149(10%) 1.228(5%)

100-%tile (Maximum)	85	90-%tile	80
75-%tile	75	10-%tile	35
50-%tile (Median)	60	Range	60
25-%tile	50	75th-25th %tile	25
0-%tile (Minimum)	25		

Descriptive Statistics Detail Report

Variable: TOTAL% Total Percent 20 Q Sections II, IV, V

Break: GROUP = 2

Mean - Average	63.33333	No. observations	30
Lower 95% c.i.limit	54.82256	No. missing values	0
Upper 95% c.i.limit	71.84412	Sum of frequencies	30
Adj sum of squares	15066.67	Sum of observations	1900
Standard deviation	22.79342	Std.error of mean	4.161491
Variance	519.5402	T-value for mean=0	15.2189
Coef. of variation	.3598962	T prob level	0.0000
Skewness	-.3861705	Kurtosis	3.242437E-02
Normality Test Value	0.979	Reject if >	1.149(10%) 1.228(5%)

100-%tile (Maximum)	100	90-%tile	95
75-%tile	75	10-%tile	37.5
50-%tile (Median)	62.5	Range	50
25-%tile	50	75th-25th %tile	25
0-%tile (Minimum)	10		

Descriptive Statistic Detail Report

Variable: TOTAL% Total Percent 20 Q Sections II, IV, V

Break: GROUP = 3

Mean - Average	78	No. observations	30
Lower 95% c.i.limit	73.41122	No. missing values	0
Upper 95% c.i.limit	82.58878	Sum of frequencies	30
Adj sum of squares	4380	Sum of observations	2340
Standard deviation	12.28961	Std.error of mean	2.243765
Variance	151.0345	T-value for mean=0	34.76299
Coef. of variation	.1575591	T prob level	0.0000
Skewness	.199443	Kurtosis	-1.027613
Normality Test Value	0.970	Reject if >	1.149(10%)
1.228(5%)			
100-%tile (Maximum)	100	90-%tile	95
75-%tile	90	10-%tile	60
50-%tile (Median)	75	Range	40
25-%tile	70	75th-25th %tile	20
0-%tile (Minimum)	60		

Term: ERROR

Summary Results _= .05

Level Codes

C»w-